

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 April 2006 (20.04.2006)

PCT

(10) International Publication Number
WO 2006/042311 A3

(51) International Patent Classification:
A61K 35/34 (2006.01)

(21) International Application Number:
PCT/US2005/036878

(22) International Filing Date: 12 October 2005 (12.10.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/960,960 12 October 2004 (12.10.2004) US

(71) Applicants (for all designated States except US): MUSCULOSKELETAL TRANSPLANT FOUNDATION [US/US]; Edison Corporate Center, Suite 300, 125 May Street, Edison, NJ 08837 (US). MASSACHUSETTS INSTITUTE OF TECHNOLOGY [US/US]; 77 Massachusetts Avenue, Cambridge, MA 02139 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): VUNJAK-NOVAKOVIC, Gordana [US/US]; 305 Fitzmaurice Circle, Belmont, MA 02478 (US). TRUNCALE, Katherine, Ann, Gomes [US/US]; 114 Meadowbrook Drive, Hillsborough, NJ 08844 (US). SUNWOO, Moon, Hae [US/US]; 28 Lakeview Drive, Old Tappan, NJ 07675 (US). GERTZMAN, Arthur, A. [US/US]; 17 Biggs Place, Flemington, NJ 08822 (US).

(74) Agent: HALE, John, S.; Gipple & Hale, 6665-A Old Dominion Drive, McLean, VA 22101 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the International search report:
23 November 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CARTILAGE IMPLANT PLUG WITH FIBRIN GLUE AND METHOD FOR IMPLANTATION

(57) Abstract: The invention is directed toward a cartilage repair assembly comprising a shaped structure of subchondral bone with an integral overlying cartilage cap which is treated to remove cellular debris and proteoglycans and milled cartilage in a bioabsorbable carrier. The shaped structure is dimensioned to fit in a drilled bore in a cartilage defect area so that said shaped bone and cartilage cap when centered in the bore does not engage the side wall of the bore and is positioned from the side wall of the bone a distance ranging from 10 microns to 1000 microns and is surrounded by milled cartilage and a fibrin thrombin glue. A method for inserting the assembly into a cartilage defect area is disclosed.



WO 2006/042311 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/36878

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61K 35/34(2006.01)

USPC: 424/548

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/548

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,782,835 (HART et al) 21 July 1998 (21.07.1998), abstract, summary of the invention, columns 7-10, in particular.	1-20
A	US 6,852,125 B2 (SIMON et al) 08 February 2005 (08.02.2005), abstract, summary of the invention, columns 13-16, in particular.	1-20
A	US 6,488,033 B1 (CERUNDOLO) 03 December 2002 (03.12.2002), abstract, columns 1-4, in particular.	1-20
A	US 5,624,463 (STONE et al) 29 April 1997 (29.04.1997), abstract and summary of the invention.	1-20
A	US 6,110,209 (STONE) 29 August 2000 (29.08.2000), abstract, summary of the invention, and columns 3-4, in particular.	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

28 August 2006 (28.08.2006)

Date of mailing of the international search report

21 SEP 2006

Name and mailing address of the ISA/US

Mail Stop PCT. Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Satyendra K. Singh

Telephone No. 571-272-8790

INTERNATIONAL SEARCH REPORT

International application No. _____

PCT/US05/36878

Continuation of B. FIELDS SEARCHED Item 3:

EAST:

USPAT, US-PGPUB, USOCR, JPO, EPO, DERWENT

STN:

CAPLUS, BIOSIS, MEDLINE, CONFSCI, PCTFULL, EMBASE

SEARCH STRATEGIES:

cartilag? articular or hyalin? or fibrocartilag?

osteocond? or bone or cartilag? and plug

mill? or minc? cartilag?

fibrin glue? or thrombin and fibrinog?

demineral? bone and growth factor? and chondrocyt? and cell?

drill? and bore or hole and cylind? and debrid?